

UNIT 2

Day 2

Roots and Radicals

Section 1.7

1)

$$\frac{\sqrt[3]{xy^2} \cdot \sqrt[3]{x^2y^4}}{\sqrt[3]{y}} = \sqrt[3]{xy} \cdot \sqrt[3]{x^2y^4}$$

$$= \sqrt[3]{x^3y^5}$$

$$= \boxed{xy\sqrt[3]{y^2}}$$

2)

$$\frac{\sqrt[4]{16x^7y^2} \cdot \sqrt[4]{2x^2y^4}}{\sqrt[4]{4xy^3}} = \frac{\sqrt[4]{2^5x^9y^6}}{\sqrt[4]{2^2xy^3}}$$

$$= \sqrt[4]{2^3x^8y^3} = x^2 \sqrt[4]{8y^3}$$

$$x^2 \sqrt[4]{8y^3}$$

$$16 = 2^4$$

3)

$$-\sqrt[8]{256x^{24}y^{12}} = -\sqrt[8]{2^8x^{24}y^{12}}$$

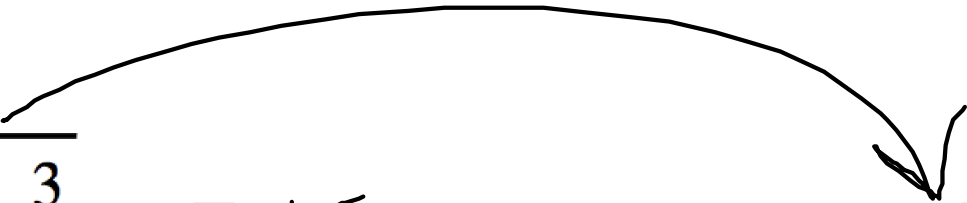
$$= -2 \cdot x^3 y \sqrt[8]{y^4}$$

$$-2x^3 y \sqrt[8]{y^4}$$

4)

$$\sqrt{x^2 + y^2} = \sqrt{\cancel{x^2} + \cancel{y^2}}$$

5)

$$\sqrt[15]{x^3} = \sqrt[15]{x^3} = \boxed{\sqrt[5]{x}}$$


$$x^{3/15} = x^{1/5}$$

6)

$$\sqrt[5]{\sqrt[3]{64}} = \boxed{\sqrt[5]{4}}$$

$$\sqrt[5]{2^2} = 2^{2/5}$$

7)

$$\sqrt[3]{\sqrt{5}} = \sqrt[3]{5^{1/2}} = \left(5^{1/2}\right)^{1/3} = 5^{1/6}$$

$\sqrt[14]{5}$

HOMEWORK

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